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Value reporting and firm performance^{*}

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Abstract

Proponents of the concept of “value reporting” emphasize the idea that it may be in firms’ interest to provide investors and other stakeholders with a holistic picture of their value generation activities. The basic idea is that by explaining more clearly how and why value is created in the company, especially by considering the interplay of financial and non-financial value drivers, management will enhance its own understanding of the value generation process. This, in turn, enables management to make better operating decisions in the future. Using a 10-year panel of Swiss firms, we document that firms with better value reporting quality deliver better future operating performance and obtain greater economic value added. They also exhibit higher valuation ratios. These results hold when controlling for industry-year fixed effects as well as with two instrumental variables approaches. These findings also shed light on the potential value generation benefits of “integrated reporting”.

Keywords: Corporate disclosure quality, integrated reporting, firm value, operating performance, value reporting

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1. Introduction

Can corporate reporting about (financial and non-financial) sources of firm value be a value driver in itself? It can if it affects one or both of the two basic sources of firm value: (expected) future cash flows and/or cost of capital. Regarding the effects of disclosure on cost of (equity) capital, scholars and practitioners can, at least to some extent, glean answers (albeit mixed) from a large body of literature (see [Healy & Palepu \(2001\)](#); [Botosan \(2006\)](#); [Beyer et al. \(2010\)](#); and [Leuz & Wysocki \(2016\)](#) for reviews). By and large, this literature suggests that effective disclosure can help reduce the cost of capital. Less work exists on the question of whether better disclosure can contribute to better operating performance. This paper addresses this question.

Towards this aim, we draw on the concept of “value reporting”. This term emphasizes a focus on not just any kind of corporate “disclosure” or “reporting”, but rather on enhanced and improved corporate reporting that is oriented towards sharing information about how value is created and distributed. While there is no final definition of value reporting, the basic idea laid out most prominently in [Eccles et al. \(2001\)](#) is that investors, as well as analysts and managers, would like to know what companies actually do to create value. Rather than just calling for more financial, results-oriented disclosures, the key feature of value reporting is that investors obtain relevant information on the positioning of the company in the market, the corporate strategy, and other non-financial value drivers.¹ More recently, under the terms “one report” and “integrated reporting” (IR), the idea that a holistic view on the financial and non-financial dimensions of company performance is essential to support value-creating decisions has been developed further.

¹The term “value reporting” appears first in Wright and Keegan (1997), introducing a PriceWaterhouse initiative. Ruhwedel and Schultze (2002) provide a historical review.

How might value reporting contribute to better operating outcomes? The basic idea is that, by explaining more clearly how and why value is created in the company, considering especially the interplay of financial and non-financial value drivers, management will enhance its understanding of the value generation process. Management is thus able to make better decisions in the future. Eccles and Krzus (2010, pp.155-156) argue that: “In seeking to establish greater clarity about the relationship between financial and non-financial outcomes, the company will find it needs better information, which will, in turn, lead to better decisions. Another contributor to better decisions is individual units seeing how their performance affects the performance of others and therefore, the company as a whole. The result of this is better internal collaboration.” Other advantages of higher quality value reporting consist of potentially reduced agency problems and greater investment efficiency. Overall, the *value generation hypothesis* holds that value reporting causally contributes to superior operating outcomes.

To test this hypothesis, we use more than a decade of recent panel data of value reporting quality on a large number of Swiss listed companies. This yearly index of value reporting quality (hereafter *VRQ*) has been provided by the Department of Banking and Finance of the University of Zurich since 1999. Parts of these data were used in prior literature (Hail, 2002; Daske & Gebhardt, 2006; Eugster, 2019) to address different research questions, such as the effect on the cost of equity capital or the impact of IFRS on voluntary disclosure. This disclosure quality index was originally constructed in Labhart (1999) with the purpose of quantifying companies’ efforts in providing a holistic view of their value creation process for their investors and other stakeholders. This index captures many aspects highlighted in the value reporting concept of Eccles et al. (2001). It goes beyond the Botosan (1997) measure in several respects discussed in the data

section. The comparability across a large sample of companies and over time has clear advantages for empirical work. The data cover around 90% of the public equity market in Switzerland.²

We find a positive relationship between current value reporting quality and future operating performance measured by (1) residual income (economic value added spread, (EVA.Spread)), (2) return on assets (ROA), and (3) return on equity (ROE). Furthermore, future firm valuation (as measured by future Tobin's Q) is positively related to current VRQ . These results hold for both the full sample as well as a reduced sample excluding financial services firms, such as banks and insurance companies. In further tests, we employ (for non-financial firms) a DuPont decomposition to investigate which channel is the driving force behind the increased profitability. We find that high VRQ -firms better utilize their working capital. These results regarding the association of both ongoing business and future growth options with value reporting hold when controlling for other firm characteristics such as size, the accounting standard, and accruals quality, and including industry and year fixed effects, as well as industry-year fixed effects. Interestingly, we find that the effects of value reporting are most pronounced in (1) small firms, (2) young firms, and (3) firms with high growth opportunities (market-to-book ratios). This is intuitive: Value reporting helps more for firms in which relatively less is known about their business model and strategy.³

²The frequently used US AIMR index comprises around 250 to 550 companies per year, covering about 30-50% of the US market capitalization. It does not focus on the idea of value reporting. The analyst subcommittees that compiled the index selected firms based on size, among other things, and the firms in the Association for Investment Management and Research (AIMR) sample have a large analyst following (Lang & Lundholm, 1993, 1996; Botosan & Plumlee, 2002)

³The cross-sectional results also help bolster confidence in the link between value reporting and future performance, since an unobserved or omitted variable would also need to explain these results.

Moreover, we study which element of value reporting is most strongly associated with value generation. We find that the following disclosures are especially linked to value generation: (1) disclosures aiming towards a clear presentation of goals and credibility, (2) risk disclosures, (3) disclosures in the management discussion and analysis section, and (4) disclosures regarding important non-financials. We also conduct an additional analysis where we focus only on elements of the disclosure that are closely linked to the core elements of the IR framework. We compare the firms that successfully adopt the required disclosure level with those firms that do not. We find that the quasi-IR-adopters obtain higher future value generation compared to the benchmark group.

The lead-lag approach (i.e., relating future performance to current value reporting) mitigates potential concerns regarding reverse causality and simultaneity (as it does in other work as well, e.g., [Dhaliwal et al. \(2011\)](#) and [Christensen \(2016\)](#)). We also conduct an instrumental-variables approach to better identify causality. It is difficult to find an instrument that offers completely exogenous variation ([Larcker & Rusticus, 2010](#)). We use two strategies. In the first, we employ one instrument that draws on a commonly used strategy in empirical research and posits that a firm's choice of *VRQ* is influenced by its peers' choices. Thus, we use the average *VRQ* of all other firms in the same industry as an instrument.

In the second strategy, we use the membership in one of the two large- and mid-cap Swiss stock market indices as an instrumental variable. When a firm is included in those prominent indices the firm reacts by increasing their *VRQ* (even when controlling for firm size).⁴

⁴Before inclusion in the indices, included firms *do not* differ significantly in their operating performance from a matched sample of firms.

Although it is impossible to definitely rule out that the instruments are correlated with unobserved determinants of performance, our controls for a range of covariates (such as size, leverage, and the accounting standards a firm follows) mitigate this concern. We find that the positive relation between *VRQ* and future operating performance and future valuation ratios continues to hold with both instrumental variables. However, the index-based instrument performs less strongly in the sample without financial firms, presumably due to the reduced sample size. In other words, it is conceivable as an alternative explanation that managers also privately convey known good news regarding future operational results by increasing transparency today (Jiao, 2011). However, this is unlikely to fully explain the results, as even plausibly exogenous changes in value reporting quality enhance future performance. Taken together, our results are consistent with the hypothesis that value reporting helps to generate value within a firm.

The main contribution of this paper is to provide evidence that corporate reporting focused on explaining how and why value is generated (i.e., value reporting) enables management to increase future profitability and, ultimately, firm value. With this finding, we contribute to the broad literature on the relationship between disclosure and firm value. Prior literature has used proxies for financial reporting quality such as accounting irregularities (McNichols & Stubben, 2008), discretionary accrual models or earnings management (Biddle et al., 2009), analyst perceptions of disclosure (Jiao, 2011), Corporate Social Responsibility (CSR) expenditures (Lys et al., 2015), or corporate accountability reporting (Christensen, 2016). Our measure is arguably closer to what management knows and writes about the company and also to what the investors can

receive in the annual report of the company.⁵ In light of the rising importance of intangibles (Lev, 2000, 2005, 2012), an important feature of our analysis is the consideration of reporting on non-financial value drivers (and their link to financial value drivers).

Our analysis also contributes to the debate on the benefits of IR,⁶ discussed in more detail in Section 5.⁷ The International Integrated Reporting Committee (2013, p.2) expresses the claim that IR “[s]upport[s] integrated thinking, decision-making and actions that focus on the creation of value over the short, medium and long term.” In other words, IR is hypothesized to promote value generation.⁸ As we show in Section 5, there is a large (though not perfect) overlap between the *VRQ* index and the IR framework’s key points. Therefore, the results of this paper provide some evidence of this claim.⁹

The paper is organized as follows. Section 2 develops the hypotheses. Section 3 covers the data and discusses the concept of value reporting. Section 4 presents the main results. Section 5 presents an additional analysis with respect to IR. Section 6 draws conclusions.

⁵Other work has focused on the quantity of disclosure, that is, the number of news items and the relation to past and future earnings (Miller, 2002). In our paper, the quantity does not change as a function of past or expected future performance, as each company must issue an annual report. The focus instead is on the quality of this one type of disclosure.

⁶An integrated report is “a concise communication about how an organization’s strategy, governance, performance and prospects, in the context of its external environment, lead to the creation of value over the short, medium and long term.” (International Integrated Reporting Committee 2013, p.7).

⁷See Dumay et al. (2016) for an overview of the development of the framework and Velte and Stawinoga (2017) for a literature review on IR.

⁸In this spirit, practitioners argue that “[b]etter-informed decisions about the relationships between financial and non-financial performance will improve the efficient and effective use of capital and other resources” (Krzus 2011, p. 275). In an international survey among executives conducted by the consultancy Black Sun (2015), 87% of all respondents agree that IR would help to drive improvements in business decision-making.

⁹Our results effectively investigate the effects of *voluntary* IR. The existing evidence in IR comes mostly from the *mandated* adoption of IR in South Africa. For example, Barth et al. (2017) and Lee and Yeo (2016) document positive valuation impacts of this regulatory change.

2. The Value Generation Hypothesis

To develop our central hypothesis, we follow the footsteps of an extensive literature on the consequences of disclosure (see Healy & Palepu (2001), Botosan (2006), and Beyer et al. (2010) for reviews.) Leuz and Wysocki (2016) distinguish between capital-market effects and real effects of disclosure, where they define the latter as situations in which the disclosing manager (or reporting entity) changes behavior in the real economy (e.g., investment or use of resources). In contrast, capital-market effects arise from the behavior of the information receiver in the capital market. Importantly, information that is initially prepared primarily for external use may be internally relevant as well, thus establishing a link between the two dimensions.

Indeed, [Rappaport \(1986\)](#) already argued that value reporting, that is, corporate reporting that is oriented towards sharing information about how value is created and distributed, is a genuine part of value-based management. In broad terms, value reporting and value-based management should help close the “value gap” (the difference between the current value of the firm and its potential value if it were managed efficiently) by improving operations, asset ownership, financial structure, and communication with shareholders ([Copeland et al., 2000](#); [Fruhan, 1988](#)). Specifically, proponents of value reporting, such as [Eccles et al. \(2001\)](#), argue that it helps managers think about how to describe their resource allocation decisions. In the process, this leads them to make better choices and achieve enhanced operating performance (see [Labhart \(1999\)](#) for the foundational contribution in the Swiss context.)

This idea is at first perhaps surprising. After all, the primary way in which reporting might affect firm value is often considered to go through how the external capital market

participants (in particular shareholders) allocate capital, thereby affecting the cost of capital.¹⁰ However, external reporting may also affect internal decision-making and, thus, the future cash flows of the company. Several channels may be at work as described in the following paragraphs.

First, higher quality financial reporting helps to increase a firm's investment efficiency by enhancing access to value-generating projects. Specifically, if such reporting reduces information asymmetries between managers and capital providers, this reduces the investment-cash flow sensitivity and enables the company to implement more positive net present value projects than if it is constrained (Biddle & Hilary, 2006).¹¹

Second, McNichols & Stubben (2008, p. 1571) find that firms that engage in earnings management (i.e., those that have low financial reporting quality) make worse investments. They argue that "investment decisions depend on expectations of the benefits of the investment, which in turn depend on expectations of future growth and product demand. Expectations of future growth are based on information that includes revenues and earnings." Moreover, as they show, the quality of this information can be adversely affected if the firm reports to the outside in a biased way. Conversely, better information about how and where value is generated has the potential to support managers to form more accurate expectations about future developments. Hence, it helps to identify better investment opportunities.

Third, external disclosures help prevent managers from expropriating shareholder wealth (Jensen & Meckling, 1976; Fama & Jensen, 1983). Knowing that shareholders

¹⁰Specifically, better disclosure may reduce (1) adverse selection, (2) liquidity risk, and (3) information risk (see Diamond & Verrecchia 1991; Easley & O'Hara 2004; Lambert, Leuz, & Verrecchia 2007). Any of these effects reduces the cost of capital.

¹¹Other research also suggests that increased financial transparency has the potential to alleviate both under- and overinvestment problems (e.g., Biddle et al. (2009), Cheng et al. (2013), and Cho (2015) for US firms; Chen et al. (2011) for emerging markets).

have an opportunity to better monitor managerial behavior if reporting quality is higher, managers will align their actions more with shareholder interests. For example, Hope and Thomas (2008) provide evidence that firms not disclosing geographical segment information engage in more empire building. Huang and Zhang (2012) show theoretically that voluntary disclosure quality decreases agency conflicts, leading to higher returns on investment. Furthermore, better reporting supports internal stewardship functions (board supervision of management).

Fourth, the potential for improved business decisions not only derives from better access to traditional financial accounting numbers, such as revenues and earnings, but also from non-financial information. Eccles and Krzus (2010, p. 155-156) point out that: “in seeking to establish greater clarity about the relationship between financial and non-financial outcomes, the company will find it needs better information, which will, in turn, lead to better decisions.” They note that managers will want to clarify the relationships between financial and non-financial outcomes with metrics. Such metrics exists for some relationships whereas for others they are harder to develop. An extensive internal collaboration across functions and business units is needed to collect and analyze the data. Arguably, if managers go the extra mile to collect and process potential metrics, they are going to learn from this effort and will, therefore, likely end up with a better metric, which leads to better managerial decisions. Thus, the management adage “what gets measured gets managed” applies an insight that also motivated the Balanced Scorecard of Kaplan and Norton (1996). Importantly, the standards for reliability are higher for information that gets reported externally. Hence, these higher quality metrics should also provide higher quality internal information, which further results in better business decisions.

Fifth, when each business unit understands its role in a broader context and better understands the consequences of its decisions on other units, better decisions for the company as a whole arise (Eccles & Krzus, 2010).

Finally, disclosure quality may also serve as a signal about the underlying quality of a firm's products, which leads to higher sales (Milgrom & Roberts, 1982; Michalisin et al., 2000; Roberts & Dowling, 2002).

When companies write the report for period t , period t performance has already happened. The theoretical arguments of how reporting might affect performance, therefore, apply to the association of reporting quality and future performance. In sum, these considerations suggest the following *value generation hypothesis*, stated in alternative form:

H₁: Value reporting quality has a positive impact on future operating performance and stock market valuations.

Prior research suggests a fine-tuned version of Hypothesis 1. Given that smaller and younger companies are less likely to have management accounting systems that are separate from financial accounting (Drury & Tayles, 1995), we expect an enhanced role of value reporting in the internal decision-making of these companies. Moreover, many of the arguments used to develop Hypothesis 1 suggest that value reporting improves investment choices, which is a relevant factor, especially for growth firms. Therefore, we expect that value reporting quality has a stronger positive impact on future operating performance for (a) smaller firms, (b) younger firms, and (c) firms with higher growth options.

Despite all the theoretical, anecdotal, and partially empirical arguments in favor of the value reporting hypothesis, there is another (not mutually exclusive) reason for why current value reporting and future operating performance may be linked. Specifically, managers may have a desire and incentives to ex-ante communicate (expected) performance to the stock market. That is, it may be that managers choose high value reporting quality to convey privately known good news regarding future operating results (see [Jiao \(2011\)](#) for an example of a related argument), much like CSR investments may signal good news for the future ([Lys et al., 2015](#)).

Furthermore, providing additional disclosures to share- and stakeholders is costly and requires resources for data collection and analysis, and writing the text for the annual report. Hence, it is more likely for firms that expect to have more operational slack (in future periods) to undertake special projects ([Fazzari et al., 1988](#)), and such projects can include disclosure-related activities (see [Hong et al. \(2012\)](#) for sustainability disclosure). Thus, value reporting quality may also signal future operating performance and stock market valuations. For investors, a relation of value reporting today and future outcomes is of interest in any case.¹² Exogenous variation in value reporting quality should be associated with future operating performance only if value reporting causally affects performance.

¹²In particular, a positive association of current value reporting quality and future operating performance would reject what [Jiao \(2011\)](#) calls the *hying* hypothesis (according to which high value reporting quality results from managers' efforts to "hype" their firms' stocks, even though there is no relation between either current or future performance and value reporting quality). It would also reject the *rating bias hypothesis* according to which the individuals who rate firms' value reporting quality assign higher ratings to firms with strong current performance, even if the disclosures themselves contain no information about future performance. Lang and Lundholm (1993) raise the potential concern that the surveyed analysts in the AIMR rankings have assigned higher disclosure ratings to companies with better prospects and operating performance.

3. Data and Method

3.1. Value reporting quality measure

We use a direct measure of the *VRQ* in annual reports of Swiss companies. The value reporting quality is assessed using a scorecard with over 100 questions aggregated into 35 items, grouped in nine subindices/categories. The scorecard contains the following nine subindices: (1) general impression, (2) background information, (3) important non-financials, (4) trend analysis, (5) risk information, (6) value-based management, (7) management discussion and analysis of annual financial statements, (8) goals and credibility, and (9) sustainability.¹³

Each of the 35 items is rated from 1 (worst information quality) to 6 (very high information quality). *VRQ* is the number of points reached as a fraction of the total points by the maximum points that would have been possible. An overview of the criteria list is presented in Table 1. The full scorecard is in Appendix B.

During our sample period, the Swiss reporting and regulation environment changed occasionally. One example is the introduction of the mandatory Corporate Governance Directive in July 2002 for companies listed on the Swiss Stock Exchange. In such cases, the checklist for the rating and necessary requirements for specific points on the rating scale was updated to cope with these new circumstances. Nevertheless, the list of criteria as such remained almost completely stable, thereby facilitating its usage in a long-run empirical study. Our study is based on data for 1999-2012.¹⁴

¹³The first and the last subindices have been available since 2002 and 2003, respectively. In line with other research such as Botosan (1997) and Hail (2002) we use an equally-weighted disclosure score.

¹⁴In that time period, value reporting through the annual report was the most important channel. Therefore, the *VRQ* found in the annual report is taken to be a reasonable proxy of overall value reporting quality. After 2012, other channels, including online reporting, may have become increasingly important. The study of such other channels and the possible continued relevance of the printed annual report is outside the scope of this paper.

The scorecard was first presented in Labhart (1999) and is closely related to the value reporting framework presented in Eccles et al. (2001). Furthermore, the selection of items included in this scorecard was also guided by financial analysts' and investors' informational needs identified in (1) prior research (Botosan, 1997), (2) a survey among Swiss institutional investors and financial analysts, and (3) interviews with a peer user group. As can be seen from the criteria list, the scorecard aims to capture companies' efforts in providing a holistic view of their value creation process for their investors and other stakeholders. While "sustainability" is one element, the focus of the scorecard is on the providers of capital.¹⁵ *VRQ* contains more information than covered in the score of Botosan (1997). Specifically, (1) corporate governance, (2) risk information, (3) value-based management, and (4) sustainability disclosures are all topics that appear only in *VRQ*. We discuss the relation of *VRQ* to the IR framework in Section 5.

The Department of Banking and Finance of the University of Zurich, which provides the rating, recruits every year around eight assessor teams to determine the rating. A team consists of two independent assessors, thus allowing double checking. The study head gives preparatory training and screens the ratings, and then compares them with previous results to maintain consistency in the process. The overall results of the rating are published in the Swiss Annual Reporting Rating and in the business magazine "Bilanz" in September of each year.¹⁶

¹⁵One can reasonably disagree with both the value reporting attributes and with the index we compute. Good value reporting quality comes down to a lot more than a point system (just like good governance, as argued by Jack and Suzy Welch in "A dangerous division of labor," Business Week, November 6, 2006). However, if the index were to convey no information, we would simply find that the index we use is not related to operating performance.

¹⁶See <http://www.geschaeftsberichte-rating.ch>. Some firms mention their rating in the subsequent annual reports or on their investor relations websites. Some firms want to know their detailed scores. The Department of Banking and Finance of the University of Zurich does not sell the data to firms, nor does it provide paid consulting services to the companies that are being studied. Instead, it provides feedback (free of charge) in the form of a brief overview of the 35 items and the firm's score on each of them.

The rating was initially conducted on about half of the listed firms in Switzerland, and then gradually expanded. In 1999, the sample included 93 listed firms (the 50 highest capitalized companies and 43 randomly selected listed firms) and 18 unlisted companies. Over the years, the coverage increased and now includes almost all the companies in the Swiss Performance Index (more than 200), which is the most closely followed stock index for the Swiss market. The data cover around 90% of the public equity market in Switzerland. In contrast to the well-known US AIMR disclosure data, this index covers a more recent period as well as a larger variation in companies by including small, medium, and large companies. This helps to investigate the empirical relation between value reporting and the financial performance effect, and provides sufficient cross-sectional variation in the information environment. The disclosure index is used in other studies, for example, [Hail \(2002\)](#), Daske and Gebhardt (2006), and [Eugster \(2019\)](#).

Value reporting is voluntary and has neither been enforced nor actively encouraged by the Swiss regulators. However, the prominent display of the best annual reports in the monthly business magazine “Bilanz” and various consultancies’ efforts to establish the concept in the Swiss business community may have contributed to an increased quality of the annual reports over the years.

[Insert Table 1 about here]

3.2. Background on the Swiss equity market

The equity market of Switzerland is important.¹⁷ In 2017, the Swiss stock market (SIX Swiss Exchange) contained 263 listed companies (228 domestic and 35 foreign) with a market capitalization of US\$ 1.7 trillion, which is 2.04% of the worldwide market capitalization. The value of shares traded in that year was US\$ 0.94 trillion. At the end of January 2020, Switzerland has the 14th highest market capitalization in the world (World Federation of Exchanges, 2020). Naturally, a large part of the market capitalization (around 70% in 2018) comes from the 20 largest market capitalized firms (blue chips that are listed in the Swiss Market Index, SMI). A drawback of the Swiss data is the relatively small number of listed firms. However, an advantage is that our value reporting data cover essentially the whole equity market over a decade. This allows sample splits according to the degree of public information available in contrast to datasets like AIMR, which focus on large firms.¹⁸

The legal origin in Switzerland is German. Switzerland has a well-functioning and efficient legal system. However, the outside investor rights are relatively weak (La Porta et al., 1997). The Swiss corporate ownership structure generally reflects an institutional setting that is similar to many non-US countries, with concentrated shareholdings among institutional shareholders and controlling ownership. Switzerland has relatively low reporting requirements (Dumontier & Raffournier, 1998), which helps to detect value reporting activities among firms. Interestingly, despite the low legal requirement and the

¹⁷La Porta et al. (1997) consider three characteristics: (1) the ratio of the aggregate stock market capitalization held by minority shareholders to gross national product, (2) the number of listed domestic firms relative to the population, and (3) the number of IPOs relative to the population. On all of these, Switzerland has one of the highest scores in the world, though the degree of ownership concentration among institutional shareholders is fairly large.

¹⁸An important advantage of using data from one country is that all firms are subject to the same regulatory framework.

concentrated ownership structure, which may provide some shareholders with inside ways to obtain information, Switzerland has an above-average level of disclosure in general (La Porta et al., 1997). Overall, understanding the implications of value reporting for Swiss companies may be of general interest, although subject to the general caveat of transferring empirical results to other contexts.

3.3. Sample and descriptive statistics

Table 2 presents summary statistics. It shows that there is significant variation in *VRQ*. Following Nikolaev and van Lent (2005), we estimate a year-to-year transition probabilities matrix, which indicates the probability of a company moving from decile a in year t to decile b in the following year. We find in untabulated results that, on average, a company remains in the same decile 27% of the time, implying that the ranking changes a fair amount. This is consistent with the fact that companies change their reporting content and style over time, and helps us to identify the effect of value reporting. The disparity between the high- and low-rated companies is relatively stable over the years.¹⁹

[Insert Table 2 about here]

In total, 406 unique Swiss companies have been rated and for many the data contain a long time series. We start from 2,570 firm-years of *VRQ* observations. We exclude companies (413 firm-years) never listed during the sample period. To eliminate potential survivorship bias, we do not exclude companies delisted during the sample period. Companies which are newly listed or went public are included as soon as a *VRQ* score is available.

¹⁹The median/average *VRQ* score shows a generally increasing trend, with some variation across years. We include year fixed effects in the operating performance regressions. When using an adjusted *VRQ*-score, namely the percentage of the maximal actually achieved points in each year, the results are unchanged.

We exclude 377 company-years that lack market or accounting data and arrive at a sample of 1,780 firm-years. Table 3 summarizes the sample construction process in Panel A. It also provides an overview of the industry composition in Panel B.

[Insert Table 3 about here]

3.4. Operating performance and firm valuation data

We use various measures of operating performance.²⁰ Appendix A provides definitions of all variables. Unless otherwise noted, we obtain these data from Thomson Reuters Datastream. In all empirical estimations we use the operating performance or firm value in the next year, which is indicated by a prefix *F*.

Our main measure of future operating performance is (1) the future economic value added spread, *F_EVA_Spread*. This quantity is calculated as net operating profit after tax (*NOPAT*) divided by the invested capital minus the tax-adjusted weighted average cost of capital.²¹ Invested capital is defined as total equity plus total debt minus total cash.

For cost of equity capital we use the capital asset pricing model (CAPM).²² To calculate the CAPM Beta we follow the approach as described in Koller, Goedhart, and Wessels (2015, p. 299) with the following formula: $beta = 2/3 * beta_{raw} + 1/3 * 1$. This formula will smooth the estimate of the regression ($beta_{raw}$) estimates towards 1, the market beta. As an example, a raw beta of 0.5 leads to an adjusted beta of 0.67. The smoothing technique of Bloomberg is inspired by Blume's (1975) findings that betas

²⁰Performance measures can mean different things in different industries. Therefore, we ensure that our results are robust to include industry fixed effects (and industry-year fixed effects).

²¹Evaluating the causal effect of value reporting on cost of capital is beyond the scope of this paper. See Eugster (2019) and Schultze et al. (2018) for recent studies on this matter.

²²A main alternative, the implied cost of equity methods using analyst forecasts, would severely restrict the sample size and bias the sample towards larger firms.

revert to the mean. The CAPM beta is estimated as in the database Bloomberg using two years of weekly data. As the risk-free rate, we use the 30-year Swiss government bond yield. We use a market risk premium of 5%.²³ As our proxy for the cost of debt, we use the interest expense on debt divided by total debt. The weights on cost of equity and cost of debt are based on book values.

Moreover, we use: (2) future return on equity (F_ROE , net income divided by lagged book equity), (3) future return on assets (F_ROA , (net income + interest expense) / lagged total assets), (4) future asset turnover (F_AT , revenues / assets), (5) future profit margin (F_PM , profit / sales), (6) future inventory holdings (in days) (F_IV_Days), (7) future days sales outstanding (F_DSO), and (8) future operating cycle (F_OPC) as the sum of the latter two measures. Measures (4) to (8) are only available for a subset of the sample firms.

While F_EVA_Spread , F_ROE , and F_ROA focus on the near term and ongoing business, we also consider the possibility that value reporting may be related to the value of future growth opportunities. As a broad measure of this value, we calculate (9) Tobin's Q , the ratio of the market value of assets to the book value of assets. The market value of assets is calculated as the sum of the book value of assets and the market value of common stock less the book value of common stock and deferred taxes.

To mitigate the influence of potential outliers, we winsorize all variables at the 1 and 99 percent levels. Appendix C shows Pearson correlations below the diagonal and Spearman correlations above the diagonal.

²³We motivate that choice by the empirical findings of Damodaran (2017) and the survey results of Fernandez et al. (2016).

3.5. Control variables

We follow prior literature, such as [Gompers et al. \(2003\)](#) and [Jiao \(2011\)](#), as closely as possible to motivate our control variables. We include as control variables: 1) $\text{Log}(TA)$, which denotes the log of total assets of the company in million Swiss francs (CHF); 2) a squared term of size $(\text{Log}(TA))^2$ to control for non-linear effects of size on disclosure and firm performance, and 3) *Leverage*, which is total debt divided by total assets. We obtain these variables from Thomson Reuters Datastream.

We hand-collect $\text{Log}(Age)$, the log of firm age, which is a potentially important indicator of both a firm's maturity (which may influence disclosure practices) and performance (see [Loderer & Waelchli, 2015](#)). We create an indicator variable for the accounting standard used, *IA_Standard*, which is 1 if the firm applies an international accounting standard such as "International Financial Reporting Standards" (IFRS) or "United States Generally Accepted Accounting Principles" (US GAAP), and zero otherwise.²⁴ The variable is zero if the company applies the local Swiss GAAP FER. We also include *AccrualQ*, the deciles value (between 0 and 1) for the accrual quality the firm has to control for other aspects of financial disclosure quality.²⁵ In 2008, the Swiss economy entered a difficult phase as the financial sector suffered. Therefore, we control for the

²⁴Firms on the main segment of the stock exchange need to apply either US GAAP or IFRS. Firms on the domestic segment of the stock exchange can also choose Swiss GAAP FER, which is a local GAAP. [Fiechter et al. \(2017\)](#) investigate the determinants and consequences of a voluntary turn away from IFRS to local GAAP.

²⁵Accruals are calculated as the difference between net income (before extraordinary items and preference dividends) and net cash flow from operating activities, scaled by total assets. In robustness tests, we estimated discretionary accruals with standard methods (such as the Modified Jones model), but given that these methods require a sufficient number of observations by industry for every given year, the sample is severely reduced. Nonetheless, untabulated regressions show that the main results continue to hold even in this case. Market-based measures that include accruals (e.g., [Francis et al., 2005](#); [Core et al., 2008](#)) are potentially subject to opportunistic manipulation by management ([Bergstresser & Philippon, 2006](#)). Other approaches measuring information quality would include the PIN measure of [Easley et al. \(2002\)](#), and the number of forward-looking statements by management ([Hussainey & Mouselli, 2010](#)), but these are not available to us.

(post)-financial crisis time period with a binary indicator variable. The time indicator for the post-financial crisis period is equal to 1 for observations in 2008 and later.

4. Results

4.1. Main findings

In presenting our empirical results, we first show the “bottom line” effect, looking at *F_EVA_Spread* as the dependent variable. While this residual income measure is used in the empirical literature on determinants of firm value, from a theoretical basis it is the best summary measure of value generation in a particular year (Rogerson, 1997). Then we investigate returns on assets and on equity, before finally turning to the more detailed investigation of working capital management.

The main results concerning future economic value added (*F_EVA_Spread*) are shown in Table 4 in Panel A. The ordinary least squares (OLS) regressions, shown in column (1), suggest that firms with greater current *VRQ* tend to generate value in the next period within the company, measured by the future economic value added (*F_EVA_Spread*).²⁶ We control for “expected” cross-sectional differences by using company size, leverage, firm age, the accounting standard, and accruals quality.

[Insert Table 4 about here]

²⁶Recall that *VRQ* published in October of year t relates to value reporting quality offered in the year $t-1$ report (which typically is distributed in March or April of year t). We are primarily interested in whether better value reporting for year t is associated with improved performance in year $t+1$. We consider *future* performance to ameliorate the possible effects of rating bias, which could yield a relation between *VRQ* and *current* performance. It is conceivable, but unlikely, that assessors give better scores to companies with better operating performance in a given year if, at the time of rating the companies’ annual reports (typically in the summer of year t), they already have insights into the companies’ performance during the year $t+1$. A source of such insights could be quarterly earnings discussions, but these are not nearly as common in Switzerland as in the US, especially in the time period under consideration.

As columns (2) and (3) show, these findings also hold with year or industry fixed effects. The regressions in columns (4) and (5) present panel regressions with industry and year and industry-year fixed effects to control for time-variant unobservable factors on the year and industry levels. We still find a positive and significant association of *VRQ* and future value generation.

The results documented in columns (1) to (5) are consistent with the value generation hypothesis, that *VRQ* leads to improved business decisions, which enhances performance. However, it is also possible that managers who forecasted poor performance for their firms in the coming year(s) might have decreased *VRQ* (perhaps to veil future performance to better secure their jobs), and those who forecasted strong performance might have increased *VRQ* (perhaps to increase their chances of being recognized as superior business leaders).

While the established association is informative for investors under both interpretations, we go one step further by employing an instrumental variables approach. A commonly employed approach in empirical studies such as ours is to posit that the choices of one firm are influenced by those of their peers (e.g., Lev & Sougiannis, 1996; Hanlon et al., 2003). Therefore, we first hypothesize that the *VRQ* of a given firm is influenced by the *VRQ* of other firms in its industry. This hypothesis can be tested in the first-stage regression of *VRQ* on *MVRQ-O*, the average *VRQ* of the *other* firms in the same industry. For this instrument to be valid in the context of our regression setting, abnormal future firm performance (i.e., future firm performance that cannot be explained by control variables) should not affect the current disclosure of other firms in the same industry. Moreover, the exogenous part of the *VRQ* is posited to vary across industry, while the endogenous part varies only within industry. While this assumption cannot be formally tested, it

appears at least not immediately violated. We include industry fixed effects to focus on the within-industry (across time) impact of *VRQ* on operating performance.

We report the first-stage regressions in Appendix D. We find that the average *VRQ* of the other firms in the industry is a highly significant predictor of *VRQ*.²⁷ The *F*-statistic of 402.9 is substantially above the conventionally applied threshold of 10 (Stock et al., 2002). As can be seen in column (6), the second-stage coefficients on *VRQ* remains significant for *F_EVA_Spread*. Also, the coefficient on *VRQ* in the instrumental variable (IV) approach is somewhat higher than in the OLS regressions but of a similar magnitude.

To assess the quantitative effects, consider an interquartile increase in *VRQ* of 0.19. The OLS estimate in column (1) implies an increase in the *F_EVA_Spread* of $0.19 \times 0.18 = 0.0342$, which is roughly 35% of the interquartile range. Considering the implications from using the peer instrument in column (6), which offers a strong first stage and has been widely used in the literature, an interquartile change from the first to the third quartile of *VRQ* increases the *F_EVA_Spread* by $0.19 \times 0.319 = 0.6$, about 60% of an inter quartile range.

We also employ a second instrument. Even controlling for firm size, the membership in the large- and medium-size stock market indexes SMI and SMIM that together cover the largest 50 stocks may heighten investors' attention. This, in turn, is likely to induce firms to increase *VRQ*. For example, evidence from the US by Boone & White (2015) indicates that firms react to index inclusion with higher disclosure levels due to the demand of institutional owners.²⁸ We control for firm size, so that we focus only on the

²⁷When using this instrument, we require that the industry has more than five companies per industry, which reduces the sample size to 1,709 firm-year observations.

²⁸Denis et al. (2003) document that *future* earnings per share performance of firms included in the Standard & Poor's (S&P) 500 index is greater and that analysts expect this change. If we find that index inclusion increases *VRQ* and that the part of *VRQ* driven by index inclusion. Then is associated with higher future performance, this is consistent with the value generation hypothesis.

additional impact of index inclusion on *VRQ*. We include year fixed effects to focus on the impact of *VRQ* on operating performance in the cross-section. The key question in the context of this instrument is whether firms included in the index are similar in their pre-inclusion performance trends to other comparable firms not included in the index. We document in Appendix E that, indeed, the companies that will be included in the index and their benchmark group (closest industry neighbor based on size that is not in the index) do *not* differ in our used performance measures. Hence, index inclusion is at least plausibly exogenous to the value reporting quality.

Column (7) of Table 4 reports the results for this second instrument. The second-stage results indicate a positive effect of value reporting quality on *F-EVA-Spread*, though the effect seems very large. Indeed, even though the F-statistic in the first stage is somewhat above 10, weak instrument concerns linger for this instrument. As a final supplementary approach and robustness check, we conduct an analysis inspired by the method proposed in Lys et al. (2015). Thus, in a first-stage regression we regress the disclosure score on the log of total assets, leverage, market-to-book ratio, cash (scaled by total assets), profitability (ROA), cash flow of operations (scaled by total assets) and industry fixed effects. Following the logic in Lys et al. (2015), under the value generation hypothesis, the optimal value reporting score computed as the predicted value from that first-stage regression should be positively correlated with future firm performance. By contrast, if managerial signaling explained the association of value reporting with future firm performance, the unexpected component of value reporting would predict future firm performance. In results available on request, we find that the “optimum/expected” disclosure score is positively associated with *F-EVA-Spread*. This finding is consistent with the notion that these disclosures help the firms to generate value. The coefficient

for the deviation of the optimal disclosure is not significant, which does not support the signaling interpretation.

Panel B of Table 4 presents the results for non-financial firms. The sample is reduced from 1,734 to 1,399 firm-year observations. Nonetheless, the results are similar to those obtained for the full sample. The coefficient on VRQ when including industry and year fixed effects turns borderline insignificant, but retains a very similar economic magnitude as before. We note that the F-statistic of excluded instruments for the *Index* instrument drops below 10, which indicates that this may be a weak instrument when applied in this smaller sample. Therefore, we caution against drawing overly strong inferences from results obtained with this instrument in the subsample of non-financial firms.

As can be seen in Panels C and D of Table 4, better VRQ is, by and large, significantly associated also with higher Tobin's Q in the following year. The regressions imply that an inter quartile range increase in VRQ predicts an increase in Tobin's Q by around a quarter to 40% of the inter quartile range of Tobin's Q . However, the second-stage coefficient with the peer-based instrument is not significant in the full sample in these regressions, though it is significant in the sample of non-financial firms. We do not have a compelling explanation for this result. However, in sum the results exhibit a pattern that is similar to the results for operating performance, thus indicating a link between current value reporting and future firm value.

Overall, the empirical evidence suggests that managers of firms with better value reporting are able to steer their firms more effectively and to generate profitability above the respective cost of capital charge.

4.2. How are firms achieving higher profitability?

We now explore how value reporting helps with various components of value generation. In Table 5, we present results for future return of assets (F_ROA), future return of equity (F_ROE), future asset turnover (F_AT), future profit margin (F_PM), and various measures of future working capital management. In each case, we use various estimation methods. We do not report the coefficients on the control variables to save space.

[Insert Table 5 about here]

Consider first F_ROA and F_ROE . Columns (1) and (3) are based on the full sample, whereas columns (2) and (4) use only non-financial firms (NF). Looking across columns (1) to (4), we see that the coefficients on VRQ are positive and statistically significant in most cases. Current levels of value reporting predict higher profitability in the next period.²⁹

We then employ a DuPont decomposition of ROA into asset turnover (column (5)) and profit margin (column (6)). Here, we focus on non-financial firms, as these quantities are most meaningful for this group of firms. The results suggest that the increase in profitability is achieved by a combination of higher asset turnover and higher profit margin. While we find a positive relationship between VRQ and both measures in the case of OLS, the results differ with the other methods. Of particular interest are the instrumental variables results. With the peer-instrument, we do not find a significant impact of VRQ on future asset turnover, but the impact on future profit margin is significant and positive.

²⁹In untabulated results, we find similar results for the future economic profit spread (equity), which is defined as ROE minus cost of equity.

Finally, in columns (7) to (9) of Table 5, we drill deeper into some components of asset turnover. We explore if value reporting is associated with different aspects of the companies' working capital management, namely, (1) the days of average inventory on hand, (2) the days of sales outstanding measured by the days of average account receivables, and (3) the combination of the two. Most coefficients on *VRQ* have the expected negative sign. The results are strongest for days of sales outstanding. However, for inventory days and operating cycle, the results with industry-year fixed effects are not statistically significant. The index instrument performs poorly in these regressions (where we lack data for some companies), leading to F-statistics below 10 and, thus, a weak instrument problem. Even the sign of the second-stage coefficients is opposite to expectations, and the coefficients are implausibly huge. Using data from the more reliable estimations with the *MVRQ-O* instrument, an interquartile increase in *VRQ* predicts 10.5 fewer days of inventory (0.19×55.29) and 8.8 days fewer of days sales outstanding. As a consequence, the future operating cycle is shortened by 20.1 days, roughly a fifth of an interquartile range.

Overall, we observe that high *VRQ* companies have a smaller operating capital (in days) in the next period. This explains a higher asset turnover and higher profitability and, ultimately, *F-EVA-Spread*.

4.3. For which firms does value reporting quality matter more?

In Table 6, we investigate for which type of firms the value-enhancing effect of disclosure matters more. In order to conduct this analysis, we split the sample based on the yearly median value of the following three variables: (1) firm age, (2) firm size, and (3) market-to-book- ratio. As above, we focus on *F-EVA-Spread* and report results for

four different estimation methods. Comparing columns (1) and (2), the results suggest that the effect of value reporting quality is larger for younger firms. In the same vein, we observe that the coefficients are larger for smaller firms than for larger firms; see columns (3) and (4). Columns (5) and (6) show that the effect of value reporting on economic performance is also more pronounced for firms with high growth options (as captured by the market-to-book-value).

[Insert Table 6 about here]

Taken together, this analysis shows that the association between value reporting and future economic performance is higher for younger firms, smaller firms, and firms with a lot of growth options. These are the firms that one would expect ex-ante to have a higher benefit from those internal systems needed to actually disclose, in a high-quality fashion, the information concerning how value is created. These results also somewhat mitigate concerns that the overall positive relation between value reporting quality and future operating performance is exclusively driven by omitted variables. Such omitted variables would have to differentially affect value reporting and performance for different types of firms.

4.4. Which elements of value reporting matter most?

Table 7 considers whether particular elements of value reporting play an especially important role. We concentrate on *F_EVA_Spread* as the dependent variable as this is the most comprehensive measure of overall value generation. We tabulate results for the OLS and industry-year fixed effects regressions, as well as for both instrumental variable

regressions.³⁰ Panel A shows coefficient estimates, while Panel B shows economic effects for an interquartile range increase in *VRQ*.

[Insert Table 7 about here]

In regards to reporting about value-based management (including matters of executive compensation), which has recently received significant attention from practitioners and policymakers, this specific type of value reporting is positively and statistically significantly associated with *F_EVA_Spread* in all four reported empirical estimation methods. The economic significance for an interquartile increase in “value-based management” is 2.7 (0.094*0.292) percentage points of *F_EVA_Spread* for the OLS estimate, which is around a quarter of *F_EVA_Spread*’s interquartile range. The two-stage least squares (2SLS) estimates drawing on the peer instrument again are larger, but not significantly.

Overall, the results in Table 7 suggest that it is not a single type of disclosure and value reporting that is particularly important. If we give greater weight to the peer instrument results, they suggest that the most important elements of value reporting quality (with effects of an interquartile range increase in *VRQ* in parentheses) are, in this order: (1) a clear presentation of goals and credibility (0.148), (2) risk reporting (0.111), (3) management discussion and analysis (0.108), and (4) reporting on important non financials (0.081). We only find little evidence on the value generation role of “sustainability” reporting quality.³¹

³⁰The peer-based instrument is computed separately for each of the nine sub-indices.

³¹For sustainability, the second-stage coefficient is positive and significant for the index-based instrument, but the first stage is too weak in that case.

5. Value Reporting and Integrated Reporting

Recently, key elements of value reporting have been developed further within the idea of IR. This concept, similar to value reporting,³² argues that providers of financial capital and other stakeholders benefit from obtaining a holistic view of a company – and that the company, in turn, benefits managers in their decision-making. As such, our results obtained so far shed some light on the potential promise of IR. This is important because relatively little evidence exists on the effects of voluntary IR.³³

To concretely assess the tightness of the connection, Appendix F presents all core elements of the current integrated reporting framework³⁴ and maps them against the components of the value reporting index. There is a very substantial overlap between the two concepts. Using the numbering as in the IR framework, the core elements of IR, namely (1) Organizational overview and external environment (4.4), (2) Governance (4.8), (3) Business model (4.10), (4) Risk and opportunities (4.23), (5) Strategy and resource allocation (4.27), (6) Performance (4.30), and (7) Outlook (4.34) are all covered by multiple elements of the value reporting rating. Sometimes an element of the value reporting rating is matched to two core elements of IR. The only core element of IR that the value reporting rating does not cover is the Basis of preparation and presentation

³²PwC (2015, p. 3) writes, “In 1999, we introduced the Value Reporting Framework which became a spark for the debate that has evolved to the concept of Integrated Reporting. The drivers behind Integrated Reporting continue to align with our own long-term vision for thriving and self-sustaining economies.” See Eccles et al. (2015) and de Villiers et al. (2017) for reviews.

³³Churet & Eccles (2014) find no relation between the extent of firms’ IR practices and return on invested capital in the past decade based on univariate statistics. Serafeim (2015) documents that firms with a strategy for integrating financial and non-financial information have more dedicated and fewer transient investors. A few papers investigate the introduction of *mandatory* IR in South Africa. For example, Barth et al. (2017) and Lee and Yeo (2016) document positive valuation impacts of this regulatory change. In some contrast, Steyn (2014) finds that South African executives perceive only small decision-making benefits from the mandatory IR adoption.

³⁴See International Integrated Reporting Committee (2013) for more details on the framework.

(4.40). Hence, the value reporting score covers seven of the eight core elements. As such, the value reporting score is arguably a reasonable proxy for IR.

To investigate this aspect further, we construct a version of the *VRQ* index where we exclude items that do not appear in IR. We then conduct two tests. First, we re-run the analysis. The correlation between our original disclosure score and the IR score is 0.95. As expected, by using this adjusted disclosure score, we find quite similar results (available upon request). Second, we consider all firms that have a disclosure score of at least 0.50 as “quasi-IR-adopters”. This is a natural cut-off: To receive an aggregate value reporting score of 0.5, firms have to receive an individual rating on average of 3 out of 6 on the 35 items. A 3 rating is defined as “disclosure available, just usable level of information quality”. Therefore, in this approach, we consider firms as having adopted IR if their value reporting is just good enough. Defining a binary indicator for adopters and non-adopters this way, we obtain the results in Table 8. We find a positive and significant coefficient for the effect of quasi-IR-adopters on their future value generation.

[Insert Table 8]

Overall, these results provide some indications that voluntary integrated reporting may indeed provide opportunities for firms to improve their internal value generation.

6. Conclusion

This paper investigates the economic effects of value reporting, a concept of disclosure that emphasizes the idea that companies should explain how value is created and distributed. In addition to reporting on financial value drivers, companies engaging in value reporting

aim to provide investors with relevant information on the positioning of the company in the market, the corporate strategy, and also non-financial value drivers.

Using a panel dataset for more than a decade of a corporate value reporting index we find evidence that, controlling for a wide range of other factors, higher value reporting quality predicts (1) higher future EVA, (2) stronger operating performance, and (3) more efficient working capital utilization. Furthermore, we find that the effects of value reporting are most pronounced in (1) small firms, (2) young firms, and (3) firms with high growth options (as captured by the market-to-book-value).

Overall, the findings are consistent with the idea that value reporting helps to unlock operational performance within a firm. Due to the (large, though imperfect) overlap of IR with value reporting, the results also to some extent support the International Integrated Reporting Council's claim that IR can help generate value. Therefore, the present results can be valuable for decision makers in companies considering voluntarily adopting IR or upgrading their value reporting approach.

The limitations of this study provide opportunities for further research. One caveat associated with the presented findings is that the evidence of exactly *how* value reporting alters managerial decisions necessarily remains somewhat indirect. Knowing more about the actual decision process of executives in the presence or absence of value reporting would be a fruitful area for future research. A second caveat is that the findings are based on a sample of firms in one country. A merit of the employed data is the internal consistency of the rating over a decade, but an international comparison may allow for further insights. Third, we acknowledge that it is very difficult to investigate the *causal* effects of value reporting quality on firm performance without a clear-cut natural experiment or random assignment. However, the lead-lag approach, the sample

partitions, and our two instrumental variable approaches in sum help to assuage possible concerns regarding the findings. Fourth, modern technologies offer ways for companies to engage in value reporting that surpass the possibilities available in printed annual reports. We look forward to research exploiting variation in the extent of value reporting and integrated reporting by using other facets of corporate communication.

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Appendix A: Definition of Variables

Variables	Description
<i>Main research variables</i>	
<i>VRQ</i>	is the measure for value reporting quality. Value reporting quality is assessed using a scorecard with over 100 questions aggregated into 35 items, grouped in nine subindices/categories. The scorecard contains the following nine subindices: (1) general impression, (2) background information, (3) important non-financials, (4) trend analysis, (5) risk information, (6) value-based management, (7) management discussion and analysis of annual financial statements, (8) goals and credibility, and (9) sustainability. See Section 3.1 for further details.
<i>Quasi_IR_Adopter</i>	is an indicator variable that is equal to one if the value of <i>VRQ</i> is larger than 0.50.
<i>Dependent Variables</i>	
<i>F_EVA_Spread</i>	is the economic value added spread in t+1. It is calculated as the net operating profit after tax (<i>NOPAT</i>) divided by the invested capital minus the tax-adjusted weighted average cost of capital. See Section 3.4 for details on the estimation for the cost of equity capital.
<i>F_ROE</i>	is the return on equity in t+1. It is calculated as net income divided by the opening balance book equity.
<i>F_ROA</i>	is the return on assets in t+1. It is calculated as (net income + interest expense) divided by opening balance total assets).
<i>F_AT</i>	is the asset turnover in t+1. It is defined as net sales or revenue dividend by assets.
<i>F_PM</i>	is the profit margin in t+1. It is calculated as profit divided by sales.
<i>F_IV_Days</i>	is the number of days of inventory holdings in t+1.
<i>F_DSO</i>	is the number of days in sales outstanding in t+1.
<i>F_OP_C</i>	is the operating cycle in t+1. It is calculated as the combination of days in sales outstanding and inventory days (<i>F_DSO</i> + <i>F_IV_Days</i>).
<i>F_TQ</i>	is Tobin's <i>Q</i> in t+1. It is calculated as the ratio of the market value of assets to the book value of assets. The market value of assets is calculated as the sum of the book value of assets and the market value of common stock less the book value of common stock and deferred taxes.
<i>Control Variables and Instrumental Variables</i>	
<i>Log(TA)</i>	is the company size calculated as log of total assets of the company in million Swiss francs (CHF).
<i>Log(TA)²</i>	is the squared term of company size.
<i>Leverage</i>	is the leverage factor calculated as total debt dividend by total assets.
<i>Log(Age)</i>	is the log of the age of the company.
<i>IA_Standard</i>	is a binary indicator variable equal to 1 if the company follows an international accounting standard such as IFRS or US GAAP; 0 otherwise.
<i>AccrualQ</i>	is the decile value (between 0 and 1) of accruals of the firm. The accruals are calculated as the difference between net income (before extraordinary items and preferred dividends) and net cash flow from operating activities, scaled by total assets.
<i>Financial Crisis</i>	is a binary indicator variable equal to 1 for observations in 2008 and later; 0 otherwise.
<i>Index</i>	is a binary indicator variable equal to 1 if the company is included in one of the main stock market indices (SMI and SMIM); 0 otherwise.
<i>MVRQ-O</i>	stands for Mean VRQ Others and is the industry average <i>VRQ</i> excluding the value reporting quality score of the company of interest.

Table 1
Value Reporting Rating Criteria List

1	Impression	5	Risk Information
1.1	Structure, usability	5.1	Implementation of risk management
1.2	Style, comprehensibility, language, illustrations	5.2	Publication of quantitative data of risk management
2	Background Information	6	Value Based Management
2.1	Discussion of important products	6.1	Application of value based management
2.2	Discussion of important markets and market share	6.2	Application of quantitative data
2.3	Strategy, critical success factors	6.3	System of management compensation
2.4	Corporate Governance I: Organization	6.4	Quantitative data of management compensation
2.5	Corporate Governance II: Governance		
3	Important Non-Financials	7	Management-Discussion and Analysis of Financial Statements
3.1	Publication of future investments	7.1	Reasons for change in revenue / market share and provisions
3.2	Publication of investments in education of staff	7.2	Reasons for change in profit and provisions
3.3	Discussion of innovation rate and process of development	7.3	Reasons for change in future investments and provisions
3.4	Discussion of customer satisfaction		
3.5	Discussion of employee satisfaction	8	Goals and Credibility
3.6	Process improvement	8.1	Target rentability or profit
3.7	Brand introduction	8.2	Target growth (revenue/market share)
4	Trend Analysis	9	Sustainability
4.1	Revenue trend by region/segment	9.1	Illustration of enterprise and product ecology
4.2	Profit trend by region/segment	9.2	Quantitative statements to the environmental impact
4.3	Investment trend by region/segment	9.3	Discussion of environmental issues
4.4	Total shareholder return	9.4	Illustration of social policy
		9.5	Quantitative statements to the social policy
		9.6	Discussion of social policy

Notes: This is the overview of the criteria used to assess value reporting quality in annual reports. The full index with the detailed questions for each element is in Appendix B.

Table 2
Sample Summary Statistics

	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>Min</i>	<i>P25</i>	<i>P50</i>	<i>P75</i>	<i>Max</i>	<i>IQR</i>
<i>VRQ</i>	1,780	0.49	0.14	0.05	0.40	0.49	0.59	0.88	0.19
<i>F-EVA_Spread</i>	1,734	0.04	0.16	-0.66	-0.01	0.03	0.09	0.67	0.10
<i>F-ROE</i>	1,780	0.09	0.16	-0.63	0.05	0.10	0.17	0.45	0.12
<i>F-ROA</i>	1,780	0.05	0.07	-0.24	0.01	0.05	0.09	0.28	0.07
<i>F-AT</i>	1,744	0.92	0.70	0.02	0.41	0.88	1.23	3.81	0.82
<i>F-PM</i>	1,738	0.71	0.12	-0.39	0.02	0.05	0.12	0.55	0.10
<i>F-IV_Days</i>	1,366	106.71	106.80	3.00	53.00	84.00	118.00	648.86	65.00
<i>F-DSO</i>	1,452	72.29	36.84	9.00	52.00	68.00	85.00	277.80	33.00
<i>F-OPC</i>	1,380	184.07	135.73	39.51	112.61	152.00	199.87	857.74	87.26
<i>F-TQ</i>	1,722	1.51	1.00	0.51	0.98	1.15	1.67	6.84	0.69
<i>Log(TA)</i>	1,780	7.43	2.02	3.88	5.92	7.18	8.58	13.84	2.66
<i>Log(Age)</i>	1,780	3.86	1.12	0.69	2.94	4.20	4.77	5.35	1.83
<i>Leverage</i>	1,780	0.20	0.15	0.00	0.07	0.18	0.30	0.75	0.23
<i>AccrualQ</i>	1,780	0.55	0.28	0.10	0.30	0.60	0.80	1.00	0.50
<i>IA_Standard</i>	1,780	0.66	0.47	0.00	0.00	1.00	1.00	1.00	1.00
<i>Financial Crisis</i>	1,780	0.46	0.50	0.00	0.00	0.00	1.00	1.00	1.00

Notes: The variables are defined in Appendix A. Data sources are described in Section 3. IQR is the interquartile range.

Table 3
Sample Selection Criteria and Industries

Panel A. Sample Breakdown		
All rated companies (listed and unlisted) in the annual value reporting rating (based on annual reports 1998-2011) in firm-years		2,570
Excluding non listed-companies (firm-years)		-413
Excluding firm-years with missing accounting or market data		-377
<i>Total (firm-years)</i>		1,780
Panel B. Industries in Sample		
Industry	N	in %
Oil & Gas	7	0.39
Basic materials	143	8.03
Industrials	538	30.22
Consumer goods	176	9.89
Health care	200	11.24
Consumer services	182	10.22
Telecommunications	13	0.73
Utilities	50	2.81
Financials	364	20.45
Technology	107	6.01
<i>Total</i>	1,780	100.00

Table 4
Regressions of Next Year's Economic Value Added and Tobin's Q on Current Value Reporting Quality

Panel A. Future Economic Value Added (<i>F_EVA_Spread</i>)						
	(1) OLS	(2) Year fixed effects	(3) Industry fixed effects	(4) Industry + year fixed effects	(5) Industry-year fixed effects	(6) IV 2nd stage <i>MVRQ-O</i>
Instrumental variable:						(7) IV 2nd stage <i>Index</i>
<i>VRQ</i>	0.180*** (4.09)	0.164*** (3.09)	0.145*** (3.18)	0.106* (1.82)	0.110* (1.78)	0.319*** (4.77)
<i>Log(TA)</i>	0.033 (1.62)	0.031 (1.56)	0.034* (1.74)	0.034* (1.75)	0.035* (1.81)	0.028 (1.41)
<i>Log(TA)</i> ²	-0.002* (-1.90)	-0.002* (-1.86)	-0.002* (-1.73)	-0.002* (-1.68)	-0.002* (-1.77)	-0.002* (-1.77)
<i>Leverage</i>	-0.133*** (-3.54)	-0.127*** (-3.40)	-0.113*** (-2.89)	-0.104*** (-2.67)	-0.110** (-2.55)	-0.111*** (-2.86)
<i>Log(Age)</i>	0.005 (0.81)	0.004 (0.76)	0.005 (0.88)	0.005 (0.82)	0.004 (0.70)	0.005 (0.83)
<i>IA_Standard</i>	0.021* (1.88)	0.019* (1.70)	0.016 (1.43)	0.014 (1.22)	0.010 (0.83)	0.009 (0.74)
<i>AccrualIQ</i>	-0.003 (-0.15)	-0.000 (-0.02)	0.010 (0.62)	0.015 (0.88)	0.016 (0.92)	0.012 (0.72)
<i>Financial Crisis</i>	-0.045*** (-4.14)	-0.023 (-1.06)	-0.034*** (-2.96)	-0.007 (-0.29)	-0.244*** (-14.65)	-0.056*** (-4.57)
<i>Intercept</i>	-0.146 (-1.52)	-0.117 (-1.22)	-0.264** (-2.59)	-0.248** (-2.40)	-0.146 (-1.53)	-0.170* (-1.71)
Observations	1,734	1,734	1,734	1,734	1,734	1,709
<i>R</i> ²	0.053	0.079	0.070	0.099	0.136	402.9
F-stat of excluded instrument						10.89
Panel B. Future Economic Value Added (<i>F_EVA_Spread</i>) Without Financial Firms						
<i>VRQ</i>	0.145*** (2.86)	0.111* (1.78)	0.143*** (2.78)	0.104 (1.60)	0.104 (1.51)	0.300*** (4.20)
Observations	1,399	1,399	1,399	1,399	1,399	1,374
<i>R</i> ²	0.060	0.091	0.072	0.104	0.145	371.1
F-stat of excluded instrument						6.2

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(1) (2) (3) (4) (5) (6) (7)

Panel C. Future Tobin's Q ($F.TQ$)						
	OLS	Year fixed effects	Industry fixed effects	Industry + year fixed effects	Industry-year fixed effects	IV 2nd stage
VRQ	1.673*** (3.39)	2.242*** (3.52)	1.008*** (2.65)	1.462*** (2.79)	1.472*** (2.61)	0.380 (1.19)
$Log(TA)$	-0.047 (-0.39)	-0.129 (-1.02)	0.082 (0.83)	0.011 (0.11)	-0.038 (-0.36)	0.106 (1.10)
$Log(TA)^2$	-0.003 (-0.38)	0.001 (0.07)	-0.007 (-1.26)	-0.005 (-0.85)	-0.002 (-0.37)	-0.007 (-1.23)
$Leverage$	-1.549*** (-5.29)	-1.535*** (-5.31)	-1.100*** (-4.13)	-1.096*** (-4.18)	-1.109*** (-3.84)	-1.094*** (-4.02)
$Log(Age)$	-0.172*** (-4.51)	-0.171*** (-4.55)	-0.114*** (-3.16)	-0.115*** (-3.23)	-0.123*** (-3.29)	-0.115*** (-3.13)
$IA_Standard$	0.195** (2.08)	0.189** (2.00)	0.130 (1.60)	0.128 (1.55)	0.127 (1.49)	0.158* (1.76)
$AccrualQ$	0.060 (0.42)	0.088 (0.64)	0.117 (0.90)	0.111 (0.90)	0.031 (0.25)	0.115 (0.87)
$Financial\ Crisis$	-0.323*** (-3.14)	-0.712*** (-4.37)	-0.187*** (-2.32)	-0.497*** (-3.56)	-0.722*** (-4.96)	-0.106* (-1.86)
$Intercept$	2.141*** (4.88)	2.369*** (5.29)	1.204** (2.46)	1.455*** (2.76)	1.854*** (4.17)	1.737*** (3.85)
Observations	1,722	1,722	1,722	1,722	1,722	1,700
R^2	0.149	0.217	0.301	0.355	0.423	1,722
F-stat of excluded instrument						409.9
						10.02
Panel D. Future Tobin's Q ($F.TQ$) Without Financial Firms						
VRQ	1.493** (2.46)	2.147*** (2.59)	1.017*** (2.33)	1.507** (2.45)	1.509** (2.25)	0.512 (1.51)
Controls for all panels	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,382	1,382	1,382	1,382	1,382	1,360
R^2	0.134	0.217	0.294	0.360	0.427	1,382
F-stat of excluded instrument						370.8
						5.3

Notes: This table presents the results from regressions of economic value added spread (F_EVA_Spread) in year $t + 1$ and Tobin's Q (TQ) in year $t + 1$ on VRQ and firm characteristics in year t . Panels A and B consider (F_EVA_Spread), while Panels C and D consider Tobin's Q (TQ). The variables are defined in Appendix A. To conserve space we show only the coefficients and t -statistics on VRQ in Panels B and D. t -statistics, based on standard errors clustered on the firm level, are in parentheses. * denotes significance at 10%, ** at 5%, *** at 1%.

Table 5
Regressions of Next Year's Company Performance and Company Net Working Capital Measures on Value Reporting Quality

	(1) <i>F_ROE</i>	(2) <i>F_ROE</i>	(3) <i>F_ROA</i>	(4) <i>F_ROA</i>	(5) <i>F_AT</i>	(6) <i>F_PM</i>	(7) <i>F_IV_Days</i>	(8) <i>F_DSO</i>	(9) <i>F_OPC</i>
OLS	0.200*** (4.16)	0.153*** (2.82)	0.112*** (4.59)	0.090*** (3.07)	0.387* (1.73)	0.070** (1.98)	-2.326 (-0.04)	-31.321*** (-2.77)	-22.661 (-0.40)
Industry-year fixed effect	0.114* (1.85)	0.089 (1.20)	0.059* (1.80)	0.056 (1.43)	0.915*** (3.17)	-0.024 (-0.54)	-100.481 (-1.25)	-33.746** (-2.27)	-121.426 (-1.49)
IV 2nd stage: <i>MVRQ-O</i>	0.432*** (4.63)	0.367*** (3.66)	0.173*** (5.07)	0.182*** (4.84)	-0.261 (-0.97)	0.222*** (4.67)	-55.286** (-2.13)	-46.261*** (-3.51)	-105.894*** (-3.63)
IV 2nd stage: <i>Index</i>	0.783** (2.03)	0.807 (1.38)	0.755 (3.02)	0.666* (1.96)	-0.266 (-0.09)	0.681 (1.60)	1,493.151** (1.97)	201.840 (0.98)	1,495.356** (1.99)
Observations for OLS	1,780	1,416	1,780	1,416	1,415	1,402	1,334	1,408	1,322
F-stat for <i>MVRQ-O</i>	423.4	382.4	423.4	382.4	382.8	384.0	378.1	385.5	375.1
F-stat for <i>Index</i>	11.73	6.0	11.73	6.0	6.0	5.6	4.5	5.6	5.0
Sample	Full	NF	Full	NF	NF	NF	NF	NF	NF

Notes: This table presents the results from regressions of an array of performance measures (in columns (1-6)) and working capital management measures (in columns (7-9)) in year $t + 1$ on *VRQ* and firm characteristics in year t . All variables are defined in Appendix A. Column (1) and column (3) are based on the full sample and the remaining columns are based on non-financial firms (NF). We report the coefficients on the value reporting quality index using OLS, OLS including industry-year fixed effects, and both instrumental variable approaches as used in Table 5. The standard control variables are included. To conserve space, we show only the coefficients and t -statistics on *VRQ*. t -statistics, based on standard errors clustered on the firm level, are in parentheses. * denotes significance at 10%, ** at 5%, *** at 1%.

Table 6
Regressions of Next Year's Economic Value Added on Value Reporting Quality: Sample Splits

Split variable: Sample:	(1)		(2)		(3)		(4)		(5)	(6)
	Age		Size		Market-to-Book Ratio		Market-to-Book Ratio			
	Young	Old	Small	Large	High	Low				
OLS	0.242*** (3.71)	0.103* (1.79)	0.250*** (3.33)	0.114** (2.37)	0.261*** (3.81)	0.027 (0.82)				
Industry-year fixed effects	0.230*** (2.26)	-0.007 (-0.10)	0.295*** (2.86)	-0.041 (-0.66)	0.197* (1.93)	-0.036 (-0.70)				
IV 2nd Stage: <i>MVRQ-O</i>	0.374*** (4.10)	0.272*** (2.86)	0.391*** (3.44)	0.250*** (4.51)	0.408*** (3.84)	0.236*** (2.95)				
IV 2nd Stage: <i>Index</i>	1.563* (1.96)	0.737 (1.33)	1.607** (2.27)	0.747* (1.86)	1.127** (2.09)	-0.818 (-1.08)				
Observations for OLS	871	863	878	856	843	855				
Controls	Yes	Yes	Yes	Yes	Yes	Yes				
F-statistic for <i>MVRQ-O</i>	220.5	169.7	203.9	226.1	195.2	191.5				
F-statistic for <i>Index</i>	3.5	9.1	6.1	9.5	8.2	1.7				

Notes: In this table, we report cross-sectional results. The dependent variable is *F-EVA-Spread* in year $t+1$. See Appendix A for variable definitions. To conduct this cross-sectional analysis, we split the sample based on the median value of the following three variables: (1) firm age, (2) firm size and (3) market-to-book ratio. To conserve space we show only the coefficients and t -statistics on *VQR*. t -statistics, based on standard errors clustered on the firm level, are in parentheses. * denotes significance at 10%, ** at 5%, *** at 1%.

Table 7
Regressions of Next Year's Economic Value Added on Specific Value Reporting Quality Dimensions

Subindex:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Impression	Background Information	Important Non-Financials	Trend Analysis	Risk Information	Value-Based Management	Management Discussion and Analysis	Goals and Credibility	Sustainability
Panel A. Regressions Results for Future Economic Value Added									
OLS	0.092*** (4.38)	0.114*** (4.03)	0.099*** (2.86)	0.057** (2.35)	0.039 (1.47)	0.094*** (4.06)	0.063** (2.37)	0.056*** (3.19)	0.046* (1.71)
Industry-Year	0.037 (1.00)	0.047 (1.18)	0.044 (1.10)	0.053* (1.81)	0.033 (1.12)	0.076** (2.44)	0.028 (0.89)	0.032* (1.80)	0.015 (0.48)
IV 2nd Stage: <i>MVRQ-O</i>	0.146*** (5.91)	0.235*** (4.72)	0.360*** (3.41)	0.034 (0.65)	0.222*** (3.54)	0.106*** (3.75)	0.388*** (2.91)	0.444*** (2.69)	-1.139* (-1.79)
IV 2nd Stage: <i>Index</i>	2.480 (1.41)	0.963** (2.35)	1.324 (1.56)	1.252 (1.59)	-1.601 (-1.15)	0.861** (2.49)	1.593 (1.31)	1.485 (1.22)	0.704** (2.02)
Observations for OLS	1,478	1,734	1,734	1,734	1,734	1,734	1,734	1,734	1,734
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F-stat for <i>MVRQ-O</i>	319.7	326.8	90.01	169.5	143.3	901.8	28.83	18.94	4.921
F-stat for <i>Index</i>	2.509	12.46	3.385	3.301	1.837	12.25	2.280	1.630	6.634
Panel B. Economic Effects									
IQR for subindex	0.167	0.183	0.226	0.250	0.500	0.292	0.278	0.333	0.389
Implied economic effects for OLS	0.015	0.021	0.022	0.014	0.020	0.027	0.018	0.019	0.018
Industry-year	0.006	0.009	0.010	0.013	0.017	0.022	0.008	0.011	0.006
IV: <i>MVRQ-O</i>	0.024	0.043	0.081	0.009	0.111	0.031	0.108	0.148	-0.443
IV: <i>Index</i>	0.413	0.177	0.299	0.313	-0.801	0.251	0.443	0.495	0.274

Notes: This table presents the results for subsets of the value reporting quality index. The dependent variable is *F-EVA-Spread* in year $t + 1$. See Appendix A for variable definitions. In Panel A, we report the coefficients on the value reporting quality index using OLS, OLS including industry-year fixed effects, and both instrumental variable approaches as used in Table 5. The standard control variables are included. To conserve space we show only the coefficients and t -statistics on the respective *VRQ* component. In Panel B, we show the economic significance for an interquartile change in the subindex reporting score. t -statistics, based on standard errors clustered on the firm level, are in parentheses. * denotes significance at 10%, ** at 5%, *** at 1%.

Table 8
Potential Benefits of Quasi-Integrated-Reporting-Adoption

Instrument	(1) OLS	(2) Year fixed effects	(3) Industry fixed effects	(4) Industry + year fixed effects	(5) Industry-year fixed effects	(6) IV 2nd stage <i>MVRQ-O</i>	(7) IV 2nd stage <i>Index</i>
<i>Quasi_IR_Adopter</i>	0.034*** (2.98)	0.034*** (2.76)	0.026** (2.33)	0.024** (2.00)	0.022* (1.72)	0.154** (2.44)	0.443* (1.78)
<i>Log(TA)</i>	0.033 (1.65)	0.032 (1.59)	0.035* (1.81)	0.034* (1.78)	0.036* (1.87)	0.014 (0.60)	-0.04 (-0.85)
<i>Log(TA)²</i>	-0.002* (-1.81)	-0.002* (-1.79)	-0.002* (-1.66)	-0.002 (-1.62)	-0.002* (-1.72)	-0.001 (-1.30)	0.000 (-0.09)
<i>Leverage</i>	-0.135*** (-3.54)	-0.127*** (-3.35)	-0.113*** (-2.87)	-0.103*** (-2.62)	-0.109** (-2.51)	-0.109*** (-2.70)	-0.105* (-1.93)
<i>Log(Age)</i>	0.005 (0.82)	0.005 (0.77)	0.005 (0.93)	0.005 (0.85)	0.004 (0.73)	0.005 (0.97)	0.006 (0.70)
<i>IA_Standard</i>	0.024** (2.17)	0.021* (1.87)	0.018 (1.64)	0.014 (1.25)	0.011 (0.91)	0.001 (0.07)	-0.04 (-0.91)
<i>AccrualQ</i>	-0.006 (-0.34)	-0.003 (-0.19)	0.01 (0.57)	0.014 (0.86)	0.015 (0.88)	0.012 (0.67)	0.05 (1.37)
<i>Financial Crisis</i>	-0.034*** (-3.46)	-0.040** (-2.38)	-0.024** (-2.40)	-0.023 (-1.40)	0.032* (1.81)	-0.066*** (-2.87)	-0.165* (-1.89)
Intercept	-0.088 (-0.94)	-0.067 (-0.72)	-0.229** (-2.28)	-0.222** (-2.18)	-0.113 (-1.20)	0.004 (0.03)	0.264 (1.19)
Observations	1,734	1,734	1,734	1,734	1,734	1,709	1,734
R-squared	0.047	0.077	0.066	0.099	0.135	0.047	0.077
Instruments						<i>MVRQ-O</i>	<i>Index</i>
F-stat of excluded instrument						35.93	4.664

Notes: We revisit the results from Table 4 and replace *VRQ* with an indicator variable *Quasi_IR_Adopters*, which is equal to one if the value of *VRQ* is larger than 0.50. See Appendix A for variable descriptions. *t*-statistics, based on standard errors clustered on the firm level, are in parentheses. * denotes significance at 10%, ** at 5%, *** at 1%.

Appendix B: Annual Value Reporting Rating

This section provides the details of the *VRQ* index outlined in Table 1. The original rating scorecard is in German; this is a translation. Scores are assigned according to the rating table below on each sub-index (1.1, 1.2, etc.). Within each subindex, a number of questions are listed that guide the assessors. No individual points are given for these questions, and they are not a final list of considerations. Assessors are given some discretion to include assessments in the spirit of these guiding questions.

The assignment of scores for each sub-index (1.1, 1.2, etc.) ranging from 1 to 6 is carried out according to the following classification:

Rating Grades

Score	Comment
6	disclosure available, outstanding level of information quality
5	disclosure available, strong level of information quality
4	disclosure available, usable level of information quality
3	disclosure available, just usable level of information quality
2	disclosure indirectly available, hardly usable level of information quality
1	no disclosure available, no usable information

1: Impression

1.1: Structure and usability

- Is the annual report well-structured (table of contents)? Can key points easily be found?

1.2: Style, comprehensibility, language, and illustrations

- Is the use of language precise? Are problems directly addressed?
- Charts and overviews: Are they selectively and meaningfully used? Are they material, relevant, and understandable? Do they contribute to the understanding of the facts presented?

2: Background Information

2.1: Discussion of key products

- Are important developments and target settings commented and/or explained at prominent positions (e.g. shareholder's letter, better on a separate page)?
- Is the development of key products and services meaningfully commented? Are statements made on expiring products (e.g. patents), new products, and margin developments?
- Are plausibility checks performed on developments (e.g. why)?

2.2: Discussion of key markets and market shares

- Management's evaluation of the competitive environment
 - Definition of the relevant markets
 - Market size in the individual markets
 - Market trend (growth, stagnation, and competition)
 - Industry trend
 - Competitive rivalry analysis: naming the main competitors, current standing in the competitive environment
 - Market regulating arrangements and entrance barriers
- Regulatory environment: Additional disclosure on legal aspects or market competition policy indications such as comments on legal proceedings, if existent.
- Which macroeconomic factors, such as interest rates, foreign currencies, demographic developments, economic situation, as well as trends have an influential impact on the expected future performance based on management's assessment?

2.3: Strategy and critical strategic success factors

- Are material representations, comments, and/or explanations given on the following topics:
 - Strategic success factors and core competences
 - Strategic short-, medium-, and long term target settings
 - Quantifiable and measurable target figures / milestones referring to strategic targets
- Are core competences plausibly characterized (i.e., meaningless statements do not count such as "our core competences are represented by our culture and employee satisfaction" or phrases similar to "we remember our core competences")?
- Are explanations given for why the stated core competences are evaluated as such (e.g., substitutability, products as a result of multiple core competences)?
- Does management state particular hypotheses on how the strategic success factors did affect the results (e.g., relationship between a core competence and a product, as well as quantification of the effect the product had on the result due to that relationship)?
- Are particular elaborations given on the development of key strategical segments such as Research & Development (R&D)?

2.4: Corporate Governance I: Organization

- Are material particulars given on group structure, shareholders, board of directors, and management?

- Are substantial details given on the board of directors and management such as background, experience, competence, as well as planned and unplanned mutations?
- Are reorganizations and newly occupied key positions commented upon?

2.5: Corporate Governance II: Governance

- Does management demonstrate commitment to openness and transparency?
- Is it shown how governance affairs are dealt with (e.g., supervision, responsibility of the board of directors and management based on guidelines, policies, and reviewing process)?
- Are details provided on:
 - Operative surveillance committees (e.g., audit, compensation)
 - Management compensation system (e.g., performance payments, options)
- Are particulars given on communication and disclosure policies as well as on how the responsibility towards all stakeholders is carried out?

3: Important Non-Financials

3.1: Disclosure of future investments

- Is a detailed capital expenditure report disclosed (e.g., R&D split by segment and/or by region)?
- Is a description and explanation of recent developments disclosed?
- Is a representation of the capital expenditure programs given with sequence and targeted market maturity?

3.2: Disclosure of investments in human capital: education and personnel development

- Is a detailed capital expenditure report disclosed (e.g., amount, days per employee, and number of employees)?
- Is a description and explanation of recent developments disclosed?
- Can logical connections with statements referring to employee fluctuation be observed?

3.3: Discussion of innovations and the development process

- Are qualitative and credible explanations given on recent developments and changes based on examples (e.g., product life cycle, share of sales deriving from new products)?
- Is benchmarking for development cycles of key product groups performed under the consideration of their competitors?
- Are measurements performed by independent institutions (quantitative particulars, e.g., statements on the level of product quality (e.g., J.D. Powers))?

3.4: Discussion of customer satisfaction based on examples or actions

- Are qualitative and credible explanations given for the developments and changes based on examples?
- Is customer satisfaction measured by an independent institution (quantitative particulars, e.g., various customer satisfaction surveys, among others, performed by J.D. Powers, Greenwich Associates)?

3.5: Discussion of employee satisfaction based on examples or actions

- Are qualitative and credible explanations given for the developments and changes based on examples?
- Are measurements performed by independent institutions (quantitative particulars)?
- Know-how and knowledge management: Is the employee's importance to and knowledge of the corporation explained? Is the development of intellectual capital described?

3.6: Process improvement based on examples or actions

- Are qualitative and credible explanations given for the developments and changes based on examples?
- Are process improvements measured by an independent institution (qualitative/quantitative particulars, e.g., International Organization for Standardization (ISO) certification)?

3.7: Brand introduction

- Are key brands and actions for their care and improvement mentioned (level of detail is material)?
- Is a description of product brand introductions and developments given (e.g., split by regions)?
- Is an elaboration given on eventual brand (re-)positioning?
- Are visual programs for brands such as brand figure, product design, packaging, and interior design described?
- Are individual brand marketing campaigns, such as advertising and important sponsoring, explained?
- Is the consumer's perception of brands monitored?
- Are legal actions taken to ensure the legal brand ownership?
- Are quantitative particulars given on the value of a brand (e.g., careful elaboration of the goodwill development of purchased brands/trademarks and/or self-performed brand value studies on purchased and/or self established brands which make statements on the premium selling price lying above of the brand)?

4: Trend Analysis

4.1: Sales trend by region/segment

- Is an in-depth development analysis of the past 3 to 5 years disclosed ?
- Is the effect of extraordinary events carefully shown and commented (e.g., merger & acquisitions or other corporate restructuring measures)?
- Is the justification of classifying corporate restructurings as extraordinary events plausible?

4.2: Profit trend by region/segment

- same 3 criteria as in 4.1

4.3: Investment trend by region/segment

- same 3 criteria as in 4.1

4.4: Total shareholder return: stock price development and cash distributions

- Are defined targets mentioned, and are consistent benchmarkings and/or industry comparisons performed?
- Are, for the stock price influential corporate actions/securities events, commented, and/or is an adjusted stock price computation performed?
- and same 3 criteria as in 4.1

5: Risk Information

5.1: Implementation of risk management

- Is the scope of the risk management and its organizational anchoring within the corporation described? By using that representation, is it understandable which organizational elements deal with risk (e.g., chief risk officer, treasury, etc.)?
- Is it soundly described if and how the systematic and comprehensive risk evaluation is performed within the corporation (e.g., for each region, is the classification into market, credit, and operative risks consistently performed)?
- Does a formal policy framework exist which explains, how risks are to be dealt with? Is such a policy framework approved by the board of directors? Does a description exist which explains how the framework is applied and implemented in practice as well within the organization?
- Are the effects current and potential risk factors may have on the corporation described?
- Are explicit actions for each individual risk factor described (e.g., hedging of foreign currency positions with futures and/or swaps)?
- Is the reporting to general management as well as to the board of directors material and performed on a regular basis?

5.2: Disclosure of quantitative risk management particulars

- Are quantitative particulars given (e.g., sensitivity analysis of risk factors and/or Value at risk figures)?
- Is the exposure against key risk factors measured and disclosed (e.g., foreign exchange, interest rates, and resource prices)?
- Is a professional risk management system deployed (either in the sense of a methodology, or as a risk management software such as Finance Kit, Quantum, Millennium, or SAP Treasury Module)?

6: Value-Based Management

6.1: Application of Value-Based Management

- Are value-based management concepts (e.g., EVA, Economic Profit, or balanced scorecard) deployed, and is its implementation described in depth (e.g., discussion and/or description of the derivation of conversions and/or the cost of capital)?
- Is the utilization of a value-based compensation system described in detail and by using examples?

6.2: Disclosure of quantitative particulars

- Are value-based measures disclosed, such as EVA for each year or company valuations including the cost of capital used?
- Are the derivations and/or sources of the previously mentioned measures shown?

6.3: Management compensation system: performance compensation and stock options

- Are the underlying principals of a compensation system explained and supported by a reasoned opinion?
- Are adjustments within the compensation system (e.g., adjustment of the exercise price) explained and supported by a reasoned opinion?
- Are compensation systems tailored for the general management only mentioned and explained?

6.4: Quantitative management compensation particulars

- Are management compensation figures reported in line with the Swiss stock exchange listing rules (i.e., disclosure of the highest salary granted)?
- Are additional disclosures made on the management compensation system (e.g., declaration of the compensation for the chief executive officer (CEO) split by base salary and bonus, or naming the total compensation granted for the overall top level management)?

7: Management-Discussion and Analysis of Annual Financial Statements

7.1: Reasons for change in sales or market share, and actions

- Is a sound statement given on the development and changes (explanation as well as justification)?
- Are actions, stated in the previous annual report, commented with respect to the outcome and/or success of those actions at present?
- Are new actions, resulting as a consequence of the reporting period, mentioned and explained (e.g., change of product features so as to prevent future product recalls having its cause in the deviation of promised and delivered quality)?

7.2: Reasons for change in profit, and actions

- Same as first 2 criteria as in 7.1
- Are new actions, resulting as a consequence of the reporting period, mentioned and explained (e.g., hedging euro currency exposure as a result of previously held large and unhedged euro currency positions)?

7.3: Reasons for change in future investments, and actions

- Same as first 2 criteria as in 7.1

- Are new actions, resulting as a consequence of the reporting period, mentioned and explained? (To be understood with regard to the future - e.g.: “As a result of the increased availability of standardized software bundles, we now reduce the propensity to invest in software development”, make-or-buy decisions, shipping around import duty/customs by investing in new plants located in the sales market XYZ, etc.)

8: Goals and Credibility

8.1: Target profitability and net income

- Is a solid statement made with regard to the targeted profitability (e.g., point estimate, absolute, and/or percentage change)?
- Are supplementary credible and solid comments given on the background leading to the statement?
- Is the target set in relation to the existing estimates being in consensus with, and given by, the following analysts?

8.2: Target growth: sales and market share

- Same 3 criteria as in 8.1.

9: Sustainability

9.1: Illustration of corporate and product ecology: ecological sustainability

- Is a material description given on the environmental policy of the corporation?
- Is a material description given on the development of, as well as on actions concerning, the ecology of the corporation and its products produced (i.e., ecological compatibility of the processes deployed within the corporation)? (Environmental compatibility of the products produced: Factors for physical products such as energy consumption, emission of harmful substances, recyclability of materials used, as well as expected life span. Factors for services such as investments under the consideration of sustainability aspects, or loan and/or mortgage interest rates dependent on sustainability aspects.)

9.2: Quantitative particulars with respect to the environmental impact

- Are material quantitative statements made on the use of resources, emission of harmful substances (its development over time), as well as level of compliance with conventions and/or guidelines?

9.3: Discussion of environmental issues

- Is the importance of the environmental policy within the corporation discussed (i.e., level of its consideration within the product development as well as during the product life cycle planning)?
- Are the effects of environmental actions on the business performance described (e.g., as to be seen in costs, benefits, reserves, ratios, as well as its monitoring through controlling)?
- Are serious discussions led and presented on topics similar to:

- Explanation of excluded segments

- Industry standards and best practices
- Relation to governmental measures and programs,
- Position of the corporation in sustainability ratings as well as its inclusion in indices (e.g., Dow Jones Sustainability Index, DJSI)?

9.4: Illustration of social policy: social sustainability

- Are topics such as equal rights, right of free speech, personnel development, health care, safety in the work environment, or measures concerning other stakeholders (e.g., relatives, residents, and communities) commented?
- Are actions and/or initiatives with respect to social responsibility and sustainability documented?

9.5: Quantitative social policy particulars

- Are quantitative measures given on employee satisfaction, wage equality, wage distribution, proportion of working women within the corporation, employee profit sharing, proportion of employee stock, or level of compliance with conventions and/or guidance?

9.6: Discussion of social policy

- Is the positioning of the social policy within the firm's culture and principles described?
- Are facts presented on investments in personnel development and employee precautions (i.e., pension plans and other post retirement benefits)?
- Are the effects of social programs as well as standardized processes for conflicts with employees (e.g., ombudsman functions) on the business performance described?

Appendix C: Correlations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1) <i>VRQ</i>															
(2) <i>F_EVA_Spread</i>	0.12 (0.00)	0.14 (0.00)	0.15 (0.00)	0.15 (0.00)	0.14 (0.00)	-0.05 (0.06)	0.09 (0.00)	0.24 (0.00)	0.38 (0.00)	0.38 (0.00)	-0.08 (0.00)	-0.01 (0.69)	0.33 (0.00)	-0.07 (0.01)	0.45 (0.00)
(3) <i>F_ROA</i>	0.14 (0.00)	0.81 (0.00)	0.84 (0.00)	0.88 (0.00)	-0.10 (0.00)	0.01 (0.64)	-0.08 (0.01)	0.43 (0.00)	0.10 (0.00)	0.10 (0.00)	-0.01 (0.71)	-0.24 (0.00)	0.11 (0.00)	-0.02 (0.49)	-0.02 (0.50)
(4) <i>F_ROE</i>	0.12 (0.00)	0.79 (0.00)	0.89 (0.00)	0.92 (0.00)	0.08 (0.00)	-0.03 (0.25)	0.07 (0.02)	0.46 (0.00)	0.10 (0.00)	0.10 (0.00)	-0.07 (0.01)	-0.22 (0.00)	0.09 (0.00)	0.04 (0.17)	-0.05 (0.09)
(5) <i>F_DSO</i>	0.08 (0.01)	-0.05 (0.05)	0.09 (0.00)	0.00 (0.95)	-0.04 (0.15)	0.01 (0.75)	-0.03 (0.30)	0.45 (0.00)	0.18 (0.00)	0.18 (0.00)	-0.04 (0.10)	-0.09 (0.00)	0.12 (0.00)	0.03 (0.31)	-0.07 (0.01)
(6) <i>F_IV_Days</i>	-0.05 (0.10)	-0.06 (0.02)	-0.07 (0.01)	-0.04 (0.15)	0.16 (0.00)	0.21 (0.00)	0.91 (0.00)	0.09 (0.00)	0.10 (0.00)	0.10 (0.00)	-0.06 (0.03)	-0.02 (0.43)	0.10 (0.00)	0.13 (0.13)	0.04 (0.13)
(7) <i>F_OPIC</i>	0.06 (0.04)	-0.07 (0.02)	0.07 (0.01)	-0.01 (0.77)	0.97 (0.00)	0.38 (0.00)	0.00 (0.00)	0.13 (0.00)	0.10 (0.00)	0.10 (0.00)	-0.03 (0.26)	-0.06 (0.02)	0.09 (0.00)	0.20 (0.00)	0.00 (0.91)
(8) <i>F_TQ</i>	0.17 (0.00)	0.33 (0.00)	0.43 (0.00)	0.29 (0.00)	0.17 (0.00)	0.05 (0.07)	0.16 (0.00)	0.00 (0.00)	0.11 (0.00)	0.11 (0.00)	-0.23 (0.00)	-0.23 (0.00)	0.20 (0.00)	0.04 (0.13)	0.03 (0.27)
(9) <i>Log(TA)</i>	0.40 (0.00)	0.08 (0.00)	0.12 (0.00)	0.15 (0.00)	0.16 (0.00)	0.07 (0.01)	0.17 (0.00)	0.03 (0.31)	0.00 (0.00)	1.00 (0.00)	0.01 (0.59)	0.21 (0.00)	0.22 (0.00)	0.03 (0.21)	-0.08 (0.00)
(10) <i>Log(TA)²</i>	0.41 (0.00)	0.08 (0.00)	0.12 (0.00)	0.15 (0.00)	0.16 (0.00)	0.07 (0.01)	0.16 (0.00)	0.04 (0.17)	0.99 (0.00)	0.00 (0.00)	0.01 (0.59)	0.21 (0.00)	0.22 (0.00)	0.03 (0.21)	-0.08 (0.00)
(11) <i>Log(Age)</i>	-0.09 (0.00)	0.00 (0.99)	-0.05 (0.07)	-0.03 (0.28)	-0.11 (0.00)	0.03 (0.23)	-0.10 (0.00)	-0.18 (0.00)	-0.05 (0.07)	-0.07 (0.01)	-0.05 (0.07)	-0.02 (0.45)	0.01 (0.63)	-0.03 (0.32)	-0.06 (0.02)
(12) <i>Leverage</i>	-0.03 (0.36)	-0.17 (0.00)	-0.16 (0.00)	-0.08 (0.00)	-0.06 (0.02)	-0.07 (0.01)	-0.07 (0.01)	-0.25 (0.00)	0.18 (0.00)	0.18 (0.00)	-0.04 (0.14)	-0.04 (0.00)	-0.04 (0.18)	-0.08 (0.00)	-0.13 (0.00)
(13) <i>IA</i>	0.32 (0.00)	0.09 (0.00)	0.08 (0.00)	0.09 (0.00)	0.07 (0.01)	0.03 (0.32)	0.07 (0.01)	0.13 (0.00)	0.21 (0.00)	0.20 (0.00)	0.01 (0.78)	-0.04 (0.13)	0.01 (0.75)	0.01 (0.00)	0.15 (0.00)
(14) <i>AccrualQ</i>	-0.08 (0.00)	-0.03 (0.27)	0.04 (0.14)	0.04 (0.15)	0.17 (0.00)	0.20 (0.00)	0.21 (0.00)	0.04 (0.11)	0.02 (0.40)	0.02 (0.42)	-0.03 (0.37)	-0.08 (0.01)	0.01 (0.79)	-0.08 (0.00)	-0.08 (0.00)
(15) <i>Financial Crisis</i>	0.44 (0.00)	-0.02 (0.56)	-0.07 (0.01)	-0.06 (0.03)	0.06 (0.04)	-0.09 (0.00)	0.03 (0.21)	-0.01 (0.68)	-0.08 (0.01)	-0.06 (0.04)	-0.07 (0.02)	-0.12 (0.00)	0.15 (0.00)	-0.08 (0.00)	-0.08 (0.00)

Notes: This table shows Pearson correlations below the diagonal and Spearman correlations above. The variables are explained in Appendix A. The *p*-values are reported below the correlation coefficient.

Appendix D: First-stage regressions

	(1) <i>MVRQ-O</i>	(2) <i>Index</i>
<i>MVRQ-O</i>	0.808*** (20.58)	
<i>Index</i>		0.040*** (3.42)
<i>Log(TA)</i>	0.041*** (2.96)	0.030** (2.12)
<i>Log(TA)²</i>	0.000 (0.05)	-0.000 (-0.19)
<i>Leverage</i>	0.020 (0.74)	0.006 (0.21)
<i>Log(Age)</i>	0.001 (0.17)	0.001 (0.24)
<i>IA_Standard</i>	0.035*** (3.85)	0.041*** (4.37)
<i>AccrualQ</i>	-0.014 (-1.12)	-0.042*** (-3.49)
<i>Financial Crisis</i>	0.037*** (5.47)	0.194*** (14.03)
Constant	-0.294*** (-4.65)	0.152*** (2.81)
Observations	1,755	1,780
R-squared	0.574	0.547

Notes: This table shows the results for first-stage regressions using (1) the industry average excluding value reporting quality score of the company of interest (*MVRQ-O*) as the instrument and (2) using the inclusion in the SMI and SMIM index as the instrument (*Index*). We include the respective concurrent (*t*) performance measure (in this case return on assets) and the same control variables as we used in Table 4. We include industry fixed effects in column (1) and year fixed effects in column (2). *t*-statistics are in parentheses. * denotes significance at 10%, ** at 5%, *** at 1%.

Appendix E: Performance and Index Inclusion

Panel A. Logit Regressions								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	ROA			ROE			EVA_Spread	
<i>L. Variable</i>	3.081 (0.90)	-2.204 (-0.46)	0.399 (0.08)	1.323 (0.81)	0.543 (0.28)	1.440 (0.67)	0.928 (0.87)	0.514 (0.36)
<i>L2. Variable</i>		3.755 (1.04)	4.646 (0.86)		0.572 (0.40)	0.261 (0.13)		1.577 (1.26)
<i>L3. Variable</i>			0.163 (0.05)			2.215* (1.66)		
<i>Size</i>	0.194*** (2.75)	0.172** (2.29)	0.114 (1.55)	0.186** (2.54)	0.161** (2.03)	0.086 (1.11)	0.201*** (2.82)	0.149** (2.06)
Constant	-16.096*** (-12.71)	-15.553*** (-11.14)	-4.987*** (-4.56)	-15.342*** (-11.93)	-14.082*** (-9.44)	-5.018*** (-4.93)	-16.105*** (-12.77)	-13.935*** (-10.30)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,282	941	780	1,282	941	780	1,225	884

Panel B. Pre-inclusion performance characteristics of companies included in the index and matched companies								
Variables	Benchmark		Treated Companies		Total		dif	
	n	mean	n	mean	n	mean	n	
<i>ROA</i>	48	0.06	48	0.08	96	0.07		0.02
<i>ROE</i>	48	0.12	48	0.15	96	0.13		0.03
<i>EVA_Spread</i>	42	0.07	42	0.04	84	0.06		-0.03

Notes: Panel A presents the results of logit regressions. The dependent variable is inclusion in one of the two indices for the Swiss stock market, the Swiss Market Index (SMI) and SMIM. The explanatory variables are variations of one of the following three variables : return on assets (ROA) in columns (1-3), return on equity (ROE) in columns (4-6), and economic value added spread (EVA_Spread) in columns (7-9). We vary the different lags for each model and include 1, 2 and 3 lags for the main performance variable. We include as control variables the one we use in the main regressions and the log value of the firm's market capitalization. *t*-statistics are in parentheses. * denotes significance at 10%, ** at 5%, *** at 1%. Panel B shows that for firms included in the index (treated group) the average performance measure in the year prior to inclusion. It also shows the same average performance measure for a benchmark group based on the same size. We exclude companies that could not be matched in this analysis.

Appendix F: Matching Elements in Integrated Reporting with Elements in Value Reporting

Core Elements in Integrated Reporting		Elements in the Value Reporting Quality (VRQ) index	
Section		Section	
4.4	Organizational overview and external environment An integrated report should answer the question: What does the organization do and what are the circumstances under which it operates?	2.1 2.2 2.3 9.1	Discussion of key products Discussion of key markets and market shares Strategy and critical strategic success factors Illustration of corporate and product ecology: ecological sustainability
4.8	Governance An integrated report should answer the question: How does the organization's governance structure support its ability to create value in the short, medium and long term?	2.4 2.5 6.1 6.2 6.3 6.4	Corporate Governance I: Organization Corporate Governance II: Governance Application of Value-Based Management Disclosure of quantitative particulars Management compensation system: performance compensation and stock options Quantitative management compensation particulars
4.10	Business model An integrated report should answer the question: What is the organization's business model?	2.1 2.2 2.3 3.2 3.3 3.4 3.5 3.6 3.7	Discussion of key products Discussion of key markets and market shares Strategy and critical strategic success factors Disclosure of investments in human capital: education and personnel development Discussion of innovations and the development process Discussion of customer satisfaction based on examples or actions Discussion of employee satisfaction based on examples or actions Process improvement based on examples or actions Brand introduction
4.23	Risks and opportunities An integrated report should answer the question: What are the specific risks and opportunities that affect the organization's ability to create value over the short, medium and long term, and how is the organization dealing with them?	5.1 5.2 9.1 9.2 9.3 9.4 9.5 9.6	Implementation of risk management Disclosure of quantitative risk management particulars Illustration of corporate and product ecology: ecological sustainability Quantitative particulars with respect to the environmental impact Discussion of environmental issues Illustration of social policy: social sustainability Quantitative social policy particulars Discussion of social policy

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4.27	<p>Strategy and resource allocation</p> <p>An integrated report should answer the question: Where does the organization want to go and how does it intend to get there?</p> <p>Performance</p> <p>An integrated report should answer the question: To what extent has the organization achieved its strategic objectives for the period and what are its outcomes in terms of effects on the capitals?</p> <p>Outlook</p> <p>An integrated report should answer the question: What challenges and uncertainties is the organization likely to encounter in pursuing its strategy, and what are the potential implications for its business model and future performance?</p>
4.30	<p>2.3 Strategy and critical strategic success factors</p> <p>3.1 Disclosure of future investments</p> <p>3.2 Disclosure of investments in human capital: education and personnel development</p> <p>3.3 Discussion of innovations and the development process</p> <p>3.4 Discussion of customer satisfaction based on examples or actions</p> <p>3.5 Discussion of employee satisfaction based on examples or actions</p> <p>3.6 Process improvement based on examples or actions</p> <p>3.7 Brand introduction</p> <p>4.1 Sales trend by region/segment</p> <p>4.2 Profit trend by region/segment</p> <p>4.3 Investment trend by region/segment</p> <p>4.4 Total shareholder return: stock price development and cash distributions</p> <p>7.1 Reasons for change in sales or market share, and actions</p> <p>7.2 Reasons for change in profit, and actions</p> <p>7.3 Reasons for change in future investments, and actions</p>
4.34	<p>8.1 Target profitability and net income</p> <p>8.2 Target growth: sales and market share</p> <p>2.3 Strategy and critical strategic success factors</p>
4.40	<p>Basis of preparation and presentation</p> <p>An integrated report should answer the question: How does the organization determine what matters to include in the integrated report and how are such matters quantified or evaluated?</p> <p>n/a</p>

Notes: See Table 1 and Appendix B for details).